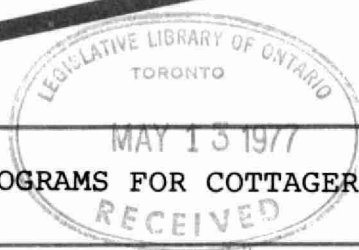


Ministry
of the
Environment

Hon. George A. Kerr, Q.C.
Minister

K. H. Sharpe
Deputy Minister



WFB7

ABOUT "SELF-HELP" PROGRAMS FOR COTTAGERS OCTOBER 1976

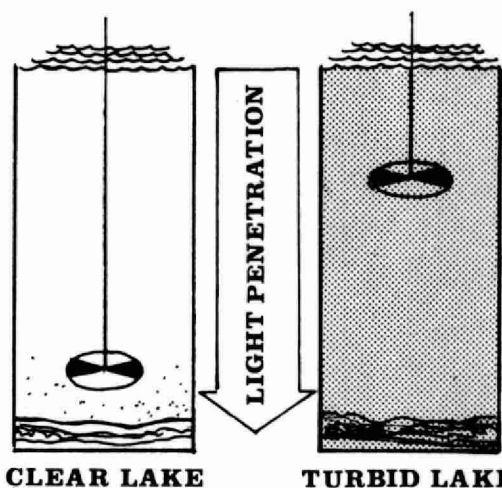
In 1975, cottagers on 150 recreational lakes in Ontario joined Environment Ontario in a self-help water quality sampling program. This number is up from 12 lakes in 1971 when the program was initiated. Of the 150 lakes sampled in 1975, only 20 were in the southeastern region of the province.

This program encourages residents, cottagers and marina and resort owners to be aware of and to understand water pollution problems in our vacation country. In addition, their voluntary assistance to staff of the Ministries of the Environment and Natural Resources contributes materially to the identification and solution of water quality problems.

The Southeastern Region office of Environment Ontario at Kingston supplies Secchi discs to cottagers -- discs painted with black and white alternating quarters. These are lowered into lake water until they disappear from view and the depth to which they are visible is recorded. In addition, Ministry staff supplies composite sampling devices which are lowered into the lakes to secure chlorophyll a samples. Chlorophyll a, the green pigment involved in photosynthesis, indicates the amount of algae and therefore the extent of biological activity in a lake at the time of sampling.

Ideally, these samplings are conducted weekly as long as a lake is ice-free and forwarded to Environment Ontario's labora-

tory in Kingston for analysis. During the winter months, the results of the testing program are summarized and reports prepared which are sent to the individuals participating in the study and to other interested parties.



CLEAR LAKE TURBID LAKE
Measuring water clarity with a Secchi Disc

Ministry biologists use information gathered from the Secchi disc and Chlorophyll a sampling in determining the amount of nutrient enrichment in a given lake. With this information, detrimental changes in water quality can be identified and remedial steps taken, before lake quality conditions become critical.

The graph illustrates the relationship between Secchi disc readings and chlorophyll levels for a large number of lakes in the province. The position on the curve indicates whether a lake is nutrient-poor (i.e. low levels of algae and good clarity) or nutrient-rich (i.e. high levels of algae and poor clarity) or in between these two extremes.

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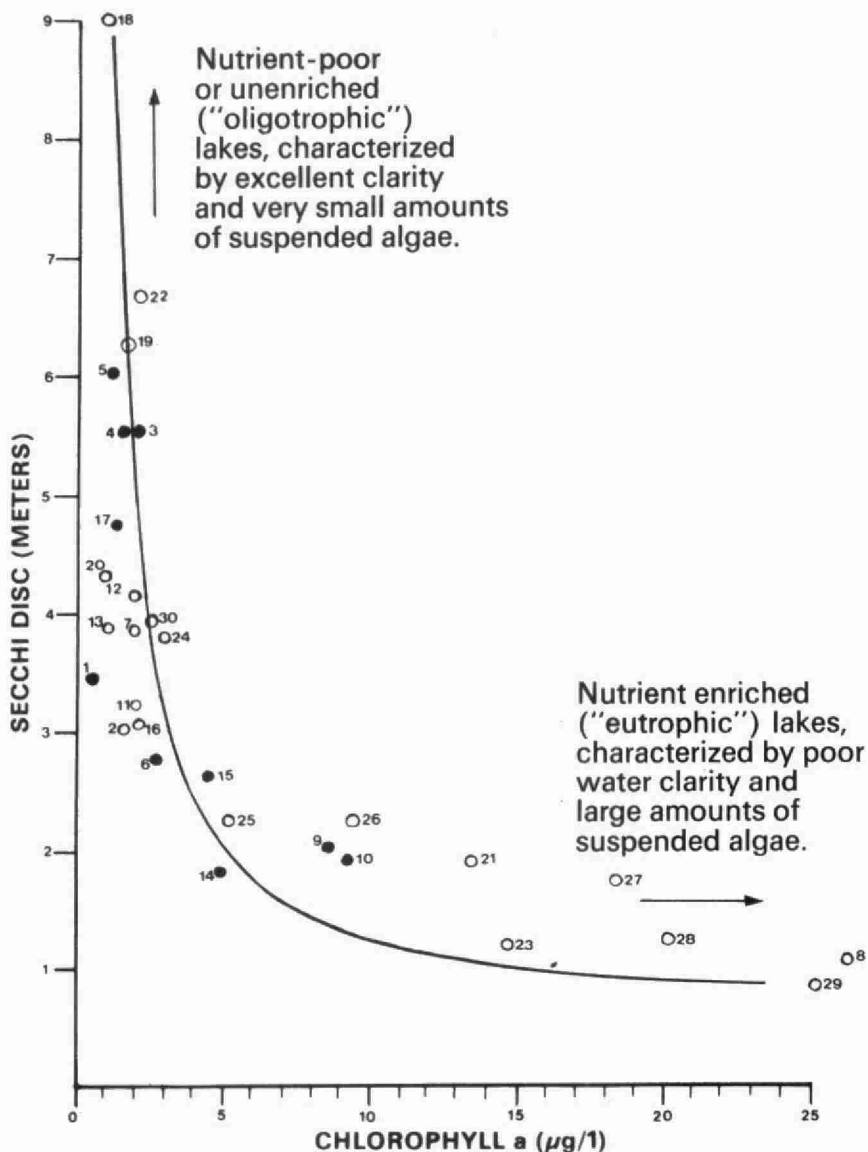
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The curve is most useful in reflecting water quality improvements or impairment. For example, in 1971 Little Otter Lake, in Parry Sound district, was characterized by mean Secchi disc values and Chlorophyll *a* concentrations of 1.0 meters and 31.2 micrograms per liter respectively; the lake was akin to a can of green paint. Following elimination of a significant proportion of the total artificial phosphorus leading to the system (phosphorus is considered to be a key nutrient contributing to algal production in most freshwater systems), spectacular water quality improvements materialized in the lake.

These changes are clearly apparent as Little Otter Lake moved along the curve from a highly enriched lake (Number 29) to a decidedly improved position (Number 30).

Owing to a large number of lakes that have not been sampled, the Southeastern Region office of Environment Ontario wishes to encourage additional participation in the program. For information and assistance in establishing a self-help program on your lake, write to: Self-Help Program, Ontario Ministry of the Environment, Southeastern Region, P.O. Box 820, Kingston, Ontario K7L 4X6. Telephone 549-4000.



1. Baptiste Lake	1974
2. Clayton Lake	1974
3. Devil Lake — Main Lake	1974
4. Devil Lake — Northeast	1974
5. Devil Lake — Southwest	1974
6. Loughborough Lake — East	1974
7. Loughborough Lake — West	1974
8. Moira Lake	1972
9. Moira Lake	1973
10. Moira Lake	1974
11. Otty Lake	1971
12. Otty Lake	1973
13. Otty Lake	1974
14. White Lake	1972
15. White Lake	1973
16. White Lake	1974
17. Crowe Lake	1974
18. Lake Joseph	1969
19. Lake Rosseau	1969
20. Lake Muskoka	1969
21. Gravenhurst Bay	1971
22. Lake Superior	
23. Lake Erie, Western Basin	1970
24. Balsam Lake	1971
25. Chemung Lake	1971
26. Sturgeon Lake	1971
27. Riley Lake	1969
28. Bay of Quinte	1967
29. Little Otter Lake	1971
30. Little Otter Lake	1972

The relationship between Secchi disc and chlorophyll *a* for a number of well-known lakes in Ontario. The position of each lake on the curve reflects the lake's relative status of enrichment. Values for each lake are based on means of data collected during the summer periods.